

Food Processing Equipment

WAC 296-806-425

Summary

- If your specific food processing machine or operation isn't listed here, then follow any facilities requirements in this section along with the "Requirements for All Machines" found in this chapter, WAC 296-806-200 and WAC 296-806-300.

This section applies to:

- All businesses that manufacture or process food, whether or not they are contained inside food stores
and
- The design, installation, operations, and maintenance of machinery and equipment used in the food processing industry.

YOUR RESPONSIBILITY:

To protect employees from hazards associated with food processing facilities and machines

You must

FACILITIES

Provide locks on chamber doors of large air conditioning units WAC 296-806-42502	425-7
Use proper door locks on rack-type bread coolers WAC 296-806-42504	425-7
Provide see-through panels on fermentation room doors WAC 296-806-42506	425-7
Cover exposed hot pipes WAC 296-806-42508	425-8
Provide extension piping on stationary lubrication fittings WAC 296-806-42510	425-8

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Food Processing Equipment

WAC 296-806-425

Summary

Provide hoods for pan washing tanks
WAC 296-806-42512 425-8

Safeguard proof boxes
WAC 296-806-42514 425-9

Safeguard storage bins
WAC 296-806-42516 425-10

MATERIAL HANDLING

Follow these design requirements for bag lifts (bag arm elevators) and chutes
WAC 296-806-42518 425-11

Follow these requirements for chain tackle
WAC 296-806-42520 425-12

Safeguard conveyors
WAC 296-806-42522 425-12

Use properly designed covers for screw conveyors (augers)
WAC 296-806-42524 425-13

Safeguard pallet jacks and hand trucks
WAC 296-806-42526 425-13

SPECIFIC FOOD PROCESSING EQUIPMENT

Safeguard bakery slicers
WAC 296-806-42528 425-14

Safeguard bakery wrapping machines
WAC 296-806-42530 425-14

Provide troughs with antifriction-bearing casters
WAC 296-806-42532 425-15



Food Processing Equipment

WAC 296-806-425

Summary

Follow these requirements for trough hoists and similar equipment	
WAC 296-806-42534	425-15
Follow these requirements for dividers	
WAC 296-806-42536	425-16
Safeguard manually-fed dough and cross-roll brakes	
WAC 296-806-42538	425-17
Provide a guard or tripping device on reversible dough brakes	
WAC 296-806-42540	425-18
Follow these requirements for doughnut machines	
WAC 296-806-42542	425-18
Follow these requirements for dumpbins and blenders	
WAC 296-806-42544	425-19
Follow these requirements for flour-handling machines	
WAC 296-806-42546	425-20
Follow these requirements for traveling or track-type flour scales	
WAC 296-806-42548	425-20
Follow these requirements for food grinders and cutters	
WAC 296-806-42550	425-21
Provide covers with interlocks on ingredient premixers, emulsifiers, and similar machines	
WAC 296-806-42552	425-21
Follow these requirements for open fat kettles	
WAC 296-806-42554	425-22
Follow these requirements for steam kettles	
WAC 296-806-42556	425-22



Food Processing Equipment

WAC 296-806-425

Summary

Follow these requirements for chocolate melting, refining, and mixing kettles WAC 296-806-42558	425-22
Safeguard meat-processing equipment (circular meat-cutting saws) WAC 296-806-42560	425-23
Follow these requirements for horizontal dough mixers WAC 296-806-42562	425-24
Follow these requirements for vertical mixers WAC 296-806-42564	425-26
Follow these requirements for mechanical-feed moulders WAC 296-806-42566	425-27
Follow these requirements for hand-fed moulders WAC 296-806-42568	425-28
Design, install, and construct your ovens according to these requirements WAC 296-806-42570	425-28
Properly locate emergency "stop" buttons and main shut-off valves for ovens WAC 296-806-42572	425-29
Inspect and test safety devices on ovens WAC 296-806-42574	425-29
Follow these requirements for peanut-cooling trucks WAC 296-806-42576	425-30
Follow these requirements for pretzel rolling, pretzel stick extruding, rotary, and die machines WAC 296-806-42578	425-30



Food Processing Equipment

WAC 296-806-425

Summary

Safeguard box and roll-type dough sheeters
WAC 296-806-42580 425-31

Provide proper enclosures for sifters
WAC 296-806-42582 425-31

Follow these requirements for sugar and spice pulverizers
WAC 296-806-42584. 425-32



Notes

Food Processing Equipment

WAC 296-806-425

Rule

FACILITIES

WAC 296-806-42502

Provide locks on chamber doors of large air conditioning units

You must

- Make sure all door locks on air conditioning unit chambers, that are large enough for employees to enter, can be operated from both inside and outside the chamber.

WAC 296-806-42504

Use proper door locks on rack-type bread coolers

You must

- Make sure all door locks can be operated from both inside and outside the bread cooler.

WAC 296-806-42506

Provide see-through panels on fermentation room doors

You must

- Provide shatterproof, see-through panels, made of wire glass or plastic, on fermentation room doors.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42508

Cover exposed hot pipes

You must

- Cover exposed hot (160° F or more) water and steam pipes with insulating material wherever necessary to prevent employee contact.

WAC 296-806-42510

Provide extension piping on stationary lubrication fittings

You must

- Provide extension piping on stationary lubrication fittings to prevent workers from reaching into the hazardous area when lubricating moving machinery.

WAC 296-806-42512

Provide hoods for pan washing tanks



Exemption:

- This requirement doesn't apply to dishwashers or sanitizers used in restaurants or retail establishments.

You must

- Provide power-ventilated exhaust hoods over the tank.

Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42514

Safeguard proof boxes

You must

- 1) Make sure all door locks can be operated from both inside and outside the proof box.
- 2) Provide guide rails to center the racks as they enter, pass through, and leave the proof box if pans, boards, or trays may be easily dislodged.



Note:

- Guide rails aren't required in proof boxes unless there are 2 doors with a pass through or pull through design.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42516

Safeguard storage bins



Exemption:

- This requirement doesn't apply to under-the-counter ingredient bins found in retail stores.

You must

- 1) Provide locks or latches to keep storage bin covers closed, and gaskets or other equivalent devices, to make sure covers are dust-tight.
- 2) Make sure employees lock covers in the open position when entering bins.
 - Covers for bins that employees may enter must have a metal fastener (hasp) and lock that can be locked in the "open" position.
- 3) Provide a standard stationary safety ladder on the inside and outside of storage bins with sides more than 5 feet deep.
 - The ends of ladders must be kept away from moving screw conveyors.
 - Outside ladders must reach from floor level to the top of the bin.
 - Inside ladders must reach from the top of the bin to the bottom of the bin.
- (4) Provide an electric interlock on the main entrance cover of large storage bins near the interior exit ladder.
 - The interlock needs to prevent feed and unloading screw motors from operating while the cover is open.



Reference:

- You may need to follow other requirements found in Confined Spaces, Chapter 296-811 WAC.

Food Processing Equipment

WAC 296-806-425

Rule

MATERIAL HANDLING

WAC 296-806-42518

Follow these design requirements for bag lifts (bag arm elevators) and chutes

You must

- 1) Make sure bag arm elevators with manual takeoff are designed to include:
 - Maximum operating capacity of 7 bags per minute.
 - Spacing of arms on the conveyor chain to obtain the full capacity of the elevator with the lowest possible chain speed.
 - An electric limit switch at the unloading end that automatically stops the conveyor chain if any bag doesn't clear the conveyor arms.
- 2) Make sure bag chutes (gravity chutes for handling flour bags) that incline more than 30° from horizontal:
 - Are designed to keep the speed of flour bags as low as possible
 - Provide an upturn at the lower end of the chute to slow down the bags
- 3) Prohibit the use of bag or barrel lifts as personnel lifts.
- 4) Prohibit manlifts in bakeries.



Definition:

Manlift is a device consisting of a power driven endless belt moving in one direction only, and provided with steps or platforms and handholds attached to it for the transportation of personnel from floor to floor.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42520

Follow these requirements for chain tackle

You must

- 1) Mark all chain tackle with the maximum load capacity so the marking is:
 - Prominently displayed
 - Legible
 - Permanent
- 2) Mark all chain tackle with minimum support specifications so the marking is legible and permanent.
- 3) Use safety hooks with chain tackle.

WAC 296-806-42522

Safeguard conveyors

You must

- 1) Install stop bumpers on all delivery ends of conveyors when products are manually removed.
- 2) Make sure all conveyors have "stop" buttons at **all** operating stations.
- 3) Provide emergency stop bars or switches at any point where both of these exist:
 - The conveyor feeds into a machine
 - and**
 - Pinch points or catching hazards exist



Reference:

- Additional requirements for conveyors are found in WAC 296-806-420.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42524

Use properly designed covers for screw conveyors (augers)



Exemption:

- This requirement doesn't apply to screw conveyors where there are drop or hinged bottom sections that can't remain airtight.

You must

- Design covers for screw conveyors that are:
 - Removable in convenient sections
 - Held in place with stationary clamps
 - Locate stationary clamps at intervals that will keep all covers dust tight.

WAC 296-806-42526

Safeguard pallet jacks and hand trucks

You must

- 1) Make sure motorized and non-motorized pallet jacks have a lock or other device that holds the handle in the vertical position when the hand truck isn't in use.
- 2) Make sure hand truck casters are set back from corners:
 - Locate them back from corners so they don't present a hazard to employee's toes and heels, but not close enough to cause the hand truck to become unstable.



Reference:

- Motorized hand trucks (pallet jacks) are classified as powered industrial trucks. Additional requirements for powered industrial trucks are found in Chapter 296-863 WAC.



Food Processing Equipment

WAC 296-806-425

Rule

SPECIFIC FOOD PROCESSING EQUIPMENT

WAC 296-806-42528

Safeguard bakery slicers

You must

- 1) Provide all slicers with a mechanical device to push the last loaf through the slicer knives.
- 2) Equip all slicers with an interlock to de-energize the motor whenever a door, panel, or other point of access to the cutting blades is open.
- 3) Protect employees sharpening blades by installing a barrier guard that provides an opening large enough for the sharpening stone to reach and sharpen slicer blades.
- 4) Provide automatic braking to stop slicers with endless band knives when the motor isn't energized.

WAC 296-806-42530

Safeguard bakery wrapping machines

You must

- 1) Extend or locate mechanical control levers that start and stop slicing machine conveyors and wrapping machines so an operator can control both machines from either location.



Note:

- The levers should be provided wherever necessary, but arranged so only one station can start the wrapping machine and conveyor assembly.
 - Set up or guard controls to prevent accidental starting.
- The electronic control station for starting and stopping the electric motor that drives the wrapping machine and conveyor should be near the clutch-starting lever.

-Continued-



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42530 (Continued)

You must

- 2) Provide a protective cover plate over electric heaters on bakery wrapping machines.
 - The cover plate must be properly separated or insulated from heaters so the plate itself isn't a burn hazard to operators.

WAC 296-806-42532

Provide troughs with antifriction-bearing casters

You must

- Provide antifriction-bearing casters on troughs so operators can move and direct them with minimal effort.

WAC 296-806-42534

Follow these requirements for trough hoists and similar equipment

You must

- 1) Mark all hoists and similar equipment with the maximum loading capacity so the marking is:
 - Prominently displayed
 - Legible
 - Permanent
- 2) Mark all hoists with minimum support specifications so that the marking is legible and permanent.
- 3) Provide safety catches for the chain so that it will hold the load in any position.
- 4) Use safety hooks with hoists.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42536

Follow these requirements for dividers

You must

- Enclose or safeguard the moving parts in the back of the divider with **all** of the following:
 - A complete cover to enclose **all** moving parts **or** an enclosure or guard for each individual part to remove separate hazards.
 - A limit switch to shut off the machine when the rear cover is open.
 - A hinged guard on the back that can't be completely removed.
 - If a catch or brace is provided for holding the cover open, make sure it won't release due to vibrations or minor bumping, causing the cover to drop on an employee.



Note:

- Dividers as discussed in this section utilize pistons, knives and blades to cut and divide large quantities of dough. This doesn't apply to small vibrating or oscillating rounders.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42538

Safeguard manually-fed dough and cross-roll brakes

You must

- 1) Guard the top roll with a heavy-gage metal shield that extends over the roll to within 6 inches of the hopper bottom board.



Note:

- The shield may be perforated to allow observation of the dough entering the rolls.

You must

- 2) Provide an emergency "stop" bar that includes a self-engaging brake.
 - Locate it so that if the operator falls forward or gets their hands caught in the rolls, their body will press against the bar, causing the rolls to stop instantly by opening the circuit to:
 - De-energize the drive motor
 - Activate a spring-set magnetic brake
 - Activate the emergency "stop" bar before each shift to make sure it's functioning properly.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42540

Provide a guard or tripping device on reversible dough brakes

You must

- Provide a guard or tripping device on each side of the rolls of reversible dough brakes.
 - The guard or device must be designed so that it stops the machine or reverses the direction of the rolls, if moved by the operator.

WAC 296-806-42542

Follow these requirements for doughnut machines

You must

- Provide separate flues for venting both of the following:
 - Vapors from the frying section
 - and**
 - Products of combustion from the combustion chamber used to heat the fat



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42544

Follow these requirements for dumpbins and blenders



Definition:

Dumpbin and blender is the part of the flour handling system where the containers of flour are emptied.

You must

- 1) Make sure dumpbin and blender hoods are large enough to prevent circulation of flour dust outside the hoods.
- 2) Provide a stop control device for dumpbins and blenders located close to the operator's work station.
- 3) Position dumpbins at an appropriate height from the floor so that operators can dump flour from bags without excessive strain or fatigue.
- 4) Provide a bag rest stop, when the edge of a dumpbin is more than 24 inches above the floor.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42546

Follow these requirements for flour-handling machines

You must

- Make sure the following safeguards are used when flour-handling systems are run in electrical unity with one another:
 - When the beginning of the system is located far from its final delivery end, make sure:
 - All electric motors operating the system have one control at each end
 - and**
 - Either control will stop all motors
 - Arrange control circuits for magnetic controllers so opening **any** limit switch on an individual unit will de-energize **all** motors on that unit.

WAC 296-806-42548

Follow these requirements for traveling or track-type flour scales

You must

- Provide bar handles for the moving of traveling or track-type flour scales.



Note:

- For easier grip, the bar should be at least one inch in diameter.

You must

- Guard trolley track wheels.

Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42550

Follow these requirements for food grinders and cutters

You must

- Make sure that food grinders and cutters:
 - Have an interlock so machines with removable hoppers can't be operated when the hopper is removed.
 - Limit access to hoppers where grid guards can't be used by providing feed conveyors or baffle-type hoppers. Hoppers must be both:
 - Enclosed and provided with hinged covers
 - and**
 - Equipped with an electric interlock so the machine won't operate with the cover open.

WAC 296-806-42552

Provide covers with interlocks on ingredient premixers, emulsifiers, and similar machines

You must

- Provide covers that attach to machines that have top openings.



Note:

- The covers should be arranged and interlocked so that power to the machine is shut off when the cover is opened far enough for the operator's fingers to come in contact with the beaters.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42554

Follow these requirements for open fat kettles

You must

- 1) Keep the floor around kettles in non-slip condition.
- 2) Make sure the top of the kettle is at least 36 inches above the floor or working level.

WAC 296-806-42556

Follow these requirements for steam kettles

You must

- 1) Provide positive locking devices to hold kettles in the desired position.
- 2) Provide safety devices for steam kettles according to:
 - The American Society of Mechanical Engineers (ASME) Pressure Vessel Code, section VIII, division I, Unfired Pressure Vessels, 2001, Kettles with Steam Jackets.

WAC 296-806-42558

Follow these requirements for chocolate melting, refining, and mixing kettles

You must

- 1) Provide a cover to enclose the top of the kettle.
- 2) Make sure the bottom outlet of each kettle is designed so the operator can't:
 - Reach in to touch the revolving paddle
 - Come in contact with the shear point between the paddle and the side of the kettle



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42560

Safeguard meat-processing equipment (circular meat-cutting saws)



Exemption:

- These requirements don't apply to table-top slicers such as those used in delis and restaurants.



Reference:

- When bandsaws are used to cut meat, follow the requirements in Make sure bandsaws meet these requirements, WAC 296-806-48042.

You must

- 1) Make sure all circular meat cutting saws have both:
 - Constant pressure controls

and

 - A brake that automatically begins to stop the blade when the switch is released
- 2) Make sure each circular meat-cutting saw has a protective guard between the operator and the blade.
- 3) Provide suspended, counterbalanced circular meat-cutting saws with guards that cover at least **one** of the following:
 - 25 degrees of the blade if the saw has two-hand controls

or

 - 90 degrees of the blade if the saw can be operated with one hand
- 4) Provide saws that aren't suspended with a guard that covers 90 degrees of the blade.



Note:

- The size of the guard depends on whether it's suspended or has one- or two-handed controls.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42562

Follow these requirements for horizontal dough mixers

You must

- 1) Make sure mixers are equipped with both of the following:
 - An individual motor and control
 - and**
 - A conveniently located manual switch that prevents the mixer from being started during servicing or cleaning.
- 2) Locate electrical control stations so control operators have a full view of bowls in the "open" position.
 - These controls, other than a "stop" switch, must not be duplicated.
- 3) Provide mixers with a full enclosure over the bowl that remains closed whenever the agitator is in motion.
 - Minor openings in the enclosure during operation, such as ingredient doors and flour inlets, must each be less than 1½ square feet in area.



Exemption:

- The full enclosure doesn't have to remain closed if the mixer has a dumping arrangement that provides safety devices where operators must use both hands in either of these situations:
 - When the agitator is in motion under power and the bowl is open more than 1/5 of its total opening
 - or**
 - When starting the agitator, if the bowl is open more than 1/5 of its total opening.

-Continued-



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42562 (Continued)

You must

- 4) Make sure overhead covers or doors that can accidentally close are either:
 - Counterbalanced to remain in the "open" position
 - or**
 - Provided with a catch, brace, or other positive means to hold them open until the operator releases them.
- 5) Locate valves and controls that regulate the coolant in mixer jackets so they can be accessed without creating hazards to the operator.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42564

Follow these requirements for vertical mixers

You must

- 1) Provide a safeguarding device to protect employees from the point of operation, if the nature of the work exposes them to contact with:
 - The pinch point where the mixing tool meets the bowl
 - The catching hazard of the mixing tool



Note:

- When evaluating exposure, the following conditions need to be considered:
 - How the mixer functions such as visibility of the agitator or ability to accidentally switch the mixer on.
 - How the worker performs operations such as adding ingredients without scraping the bowl or reaching into the bowl when the mixer is in motion.
 - How close the worker gets to the hazard during operation.
 - The worker's tools, clothing, jewelry, or hair that might get caught or fall into mixer
 - Type of guarding, if any
 - Slipping or tripping hazards in the area.

You must

- 2) Make sure mixers are equipped with both of the following:
 - An individual motor and control
 - and**
 - A conveniently located manual switch that prevents the mixer from being started during servicing or cleaning.

-Continued-



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42564 (Continued)

- 3) Make sure overhead panels or doors on mixers that can accidentally close are either:
 - Counterbalanced to remain in an open position
 - or**
 - Provided with catches, braces, or other positive means to hold them open until the operator releases them.
- 4) Make sure bowl-locking devices are the type that must be intentionally unlocked by the operator.
- 5) Provide devices for moving filled bowls that weigh more than 80 pounds in and out of the mixing position on the machine.

WAC 296-806-42566

Follow these requirements for mechanical-feed moulders

You must

- Make sure hoppers for mechanical-feed moulders are designed and connected to the proofer so employee's hands can't contact the in-running rolls.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42568

Follow these requirements for hand-fed moulders

You must

- 1) Provide hand-fed moulders with **either** of the following, so employee's hands cannot enter the hopper and contact in-running rolls:
 - A hopper that can be extended high enough to protect the employee
 - The top edge of the hopper needs to be well rounded to prevent injury when struck or bumped by an employee's hand
 - or**
 - A belt feed device
- 2) Provide **each** of these workers with a stopping device that can be easily reached:
 - The operator feeding the moulder
 - The employee taking the dough away from the moulder.

WAC 296-806-42570

Design, install, and construct your ovens according to these requirements

You must

- Make sure all ovens manufactured or installed **before** August 13, 1999 meet or exceed ANSI Z50.1-1947 design, manufacturing, and installation requirements.
- Make sure all ovens manufactured or installed on or **after** August 13, 1999 meet the design, manufacturing, and installation requirements in ANSI/NFPA 86-1999.



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42572

Properly locate emergency “stop” buttons and main shut-off valves for ovens

You must

- 1) Locate emergency stop buttons on mechanical ovens close to where operators are stationed.
- 2) Locate main shutoff valves where they can be accessed in case of an emergency.
 - Main shutoff valves that permit turning off the fuel or steam in case of an emergency must operate independently of any automatic valves.

WAC 296-806-42574

Inspect and test safety devices on ovens

You must

- 1) Inspect ovens at least twice a month by a formally appointed, properly trained, bakery employee.
 - Include the following in your inspection:
 - All safety devices
 - Testing of all safety shutoff valves, making sure they are positively tight
- 2) Make sure a representative of the oven manufacturer performs an annual inspection.
- 3) Test all piping on ovens to make sure they are gas tight.
- 4) Test oven systems as follows:
 - Test duct systems on indirect recirculating ovens that operate under pressure for tightness at the following intervals:
 - When the oven is first started
 - At least every 6 months after that



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42576

Follow these requirements for peanut-cooling trucks

You must

- Make sure the entire top of the peanut-cooling truck has a grid-type cover.

WAC 296-806-42578

Follow these requirements for pretzel rolling, pretzel stick extruding, rotary, and die machines

You must

- Protect the operator's hands from getting caught in moving parts by doing **at least one** of the following:
 - Cover the entire opening of dough hoppers with grid-type guards
 - Extend the hopper higher



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42580

Safeguard box and roll-type dough sheeters

You must

- 1) Guard exposed rolls with **either** of these methods:
 - Guard the nip point of exposed sheeting rolls at the point where the dough enters the rolls
 - or**
 - Provide an emergency "stop" bar that extends the length of unguarded rolls that will stop the rolls on contact with the operator, if a barrier guard interferes with machine operation.
- 2) Provide a stopping device for hoppers.
 - Provide an automatic "stop" bar or stopping device along the back edge of the hopper.
 - If machine construction doesn't allow for this, place the bar or device where it will be most effective.

WAC 296-806-42582

Provide proper enclosures for sifters

You must

- Make sure enclosures on flour sifters:
 - Are dust-tight
 - Allow for ease of interior inspection



Food Processing Equipment

WAC 296-806-425

Rule

WAC 296-806-42584

Follow these requirements for sugar and spice pulverizers

You must

- 1) Remove static electricity by grounding all drive belts used in sugar and spice pulverizers by using metal combs.
- 2) Follow the National Fire Protection Association (NFPA) 61-1999, Standard for Pulverizing Sugar and Spice Grinding, in order to prevent fires and dust explosions in agricultural and food products facilities.
- 3) Provide magnetic separators to reduce fire and explosion hazards.

